0.005) and pre-PMV NYHA class IV (p = 0.05) as independent predictors of combined events at follow-up.

Conclusions: 1) Pts in AF have clinical and morphologic features associated with inferior results after PMV. 2) In pts in AF, PMV results in worse immediate and long term outcomes.

1012-21 Commissural Prolapse: A Marker of Severity for Mitral Valve Repair

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Commissural anatomy has significant impact on the outcome of percutaneous mitral commissurotomy, but it has not been demonstrated for mitral valve (MV) repair. The aim of this study was, therefore, to evaluate the clinical characteristics and therapeutic implications of mitral regurgitation (MR) due to commissural lesions. Out of 269 consecutive patients (pts) who underwent MV repair for severe MR in the same institution, we selected a homogeneous subgroup of 190 pts with MV prolapse (MVP): 40 (gr.1) had a commissural prolapse, 72 (gr.2) had extensive prolapse without commissural involvement and 78 (gr.3) had a prolapse localised to the medial portion of posterior leaflet. There was no difference between the 3 groups as regards gender, NYHA class, cardiac rhythm and left ventricular function. Endocarditis was more often the cause of MR in gr. 1 (38%) than in gr.2 and 3 (18 and 19%, p < 0.001). Complex repair comprising 3 or more procedures was more often performed in gr.1 (83%) and gr.2 (67%) than gr.3 (5%) (p < 0.02), resulting in a significantly longer mean cross clamp time (75 and 67 mn vs 19 mn, p < 0.001). Postoperative echocardiographic evaluation showed significant residual MR resulting in reoperation in 13% of pts in gr.1, 1.4% in gr.2 and 2.5% in gr.3 (p < 0.13).

Conclusion: Commissural lesions 1) Accounted for 21% of cases of MVP in this series. 2) Are frequently due to endocarditis. 3) Are anatomically extensive and require complex surgical procedures. 4) Have a higher rate of postoperative MR requiring reoperation than other localizations.

1012-22 Unloading Long Term Effect of Enalapril in Asymptomatic Patients With Severe Chronic Aortic Regurgitation

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Background: The renin angiotensin system may be activated in chronic aortic regurgitation (AR). Early administration of a vasodilator drug may reduce left ventricular (LV) dilation and mass expansion.

Methods: To assess the long term effect of ACE inhibition in asymptomatic patients (pt) with severe AR we compared echocardiographic left ventricular (LV) performance in 30 pt before and after 6 months. After randomization 15 pt were allocated to: enalapril (E) therapy (26 ± 6 mg/day) and 15 pt served as control (C).

Results: There were no differences in baseline Echo measurements of LV diameters, volumes, mass and mean wall stress (MWS) between E and C groups. After 6 months pt receiving E had a reduction in end-diastolic (EDD) (from 70.0 ± 8.1 to 64.6 ± 6.4 mm, p < 0.001) and end-systolic (ESD) (from 46.1 ± 8.3 to 42.0 ± 6.6 mm, p < 0.001) diameters, end-diastolic (EDVI) (from 136.6 ± 28.9 to 113.9 ± 21.9 ml/m^2, p < 0.001) and end-systolic (ESVI) (from 53.3 ± 19.6 to 42.6 ± 13.8 ml/m^2, p < 0.001) volumes, LV mass (from 214.0 ± 58.0 to 167.4 ± 37.7 g/m^2, p < 0.001) and MWS (from 370.0 ± 93.6 to 284.2 ± 53.3 kdyne/cm^2). In C group LV diameters, volumes, mass and MWS did not change after 6 months. Between E and C group it was a clear difference in EDVI (113.9 ± 21.9 vs 143.4 ± 34.4 ml/m^2, p < 0.01), ESVI (42.6 ± 13.8 vs 57.5 ± 19.6 ml/m^2, p = 0.02), LV mass (167.4 ± 37.7 vs 226.1 ± 51.5 g/m^2, p < 0.01) and MWS (284.2 ± 53.3 vs 365.9 ± 97.0 kdyne/cm^2, p < 0.01) after 6 months.

Conclusions: Long term therapy with enalapril in asymptomatic pt with severe chronic AR decreases LV size and mass and has the potential to delay timing for aortic valve replacement.

1013 Minimally Invasive Coronary Revascularization

Sunday, March 29, 1998, 5:00 p.m.–7:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 5:00 p.m.–7:00 p.m.

1013-41 Minimal Access Aortocoronary Bypass Surgery With Endovascular Balloon Clamp: Technical Precision, Operative Times, Complications

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Background: Minimal access CABG surgery with a catheter-based system using an endovascular balloon clamp allows less invasive cardiac surgery with circulatory support and myocardial protection. Concern exists about technical difficulties, prolonged operative times, cost factors, and complications.

Methods: Between 5/96 and 1/97, 12 men and 5 women (35–74 yrs, mean 60) underwent CABG with left internal mammary to LAD coronary artery. Mini-anterior thoracotomy (6–8 cm) with single costal cartilage resection was used for access. Clinical follow-up was obtained at 2 and 6 weeks, and exercise EKG at 12 weeks. Angiocardiography was performed in the first 10 successfully completed patients to assess anastomotic quality.

Results: Three patients converted to uneventful open procedures following various technical difficulties early in the series. Precise anastomoses were achieved in the other 14 patients. Mean operative, bypass, and ischemic times for these 14 patients were 168, 36, and 16 minutes respectively. Median post-operative hospital stay was 4 days. Three patients required readmission within 2 weeks (pneumonia, wound infection, claudication after femoral cannulation), and 2 complained of abnormal chest wall movement after costal cartilage resection. All patients were angina free and had no ischemia on exercise EKG at 12 weeks. Coronary angiography in the first 10 patients showed 100% patency with no anastomotic narrowing.

Conclusions: Use of this system provided adequate cardioplegic arrest with precise, validated anastomoses. However, mini-thoracotomy and groin cannulation have separate and independent risks compared with standard sternotomy. Moreover, prolonged operative times and increased equipment costs compared with open procedures suggest that ongoing evaluation of this technique is required.

1013-42 Postoperative Outcomes of Minimally Invasive Direct Coronary Artery Bypass Surgery

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Background: Minimally invasive direct coronary artery bypass (MIDCAB) surgery is described as the grafting of the left or right internal mammary artery to the left and right anterior descending arteries, done through a limited anterior thoracotomy, without cardiopulmonary bypass pump (CPB). This prospective study was done to determine postoperative outcomes of MIDCAB grafting.

Methods: From February, 1996 to January, 1997, 102 patients underwent isolated grafting of the left or right internal mammary artery to the left or right anterior descending artery through a limited anterior thoracotomy without CPB. Mean Cleveland Clinic and modified Parsonnet Scores were 5.0 ± 2.0 and 4.8 ± 2.1, respectively, and mean preoperative ejection fraction was 42 ± 12%. The population included 7 patients converted to conventional bypass and 24 redo operations.

Results: Operative outcomes included: mortality 3.9% (4/102), myocardial infarction 3.9% (4/102), cerebrovascular accident 1.9% (2/102), atrial fibrillation 4.9% (5/102), transfusions required 9.5% (10/102), hematocrit change (−3.7 ± 4.2%), reoperation for bleeding 4.9% (5/102), with 87% (89/102) of patients extubated at the end of the operation. Twenty (20) patients, 2 of whom died prior to and 1 who refused, were randomized to have angiography and duplex doppler ultrasound at 3-month postoperatively. Angiographic patency of 94% (16/17). Mean follow-up and 19-months actuarial survival were 15 ± 3 months and 96%, respectively.

Conclusion: MIDCAB grafting can be performed safely in selected patients who otherwise would have difficulty recovering from CPB.